DIELECTRIC LABORATORIES

2 to 18 GHz Bandpass Filter Series

Features

- Small Size
- Fully Shielded Component
- Frequency Stable over Temperature

Description

Utilizing DLI's high permittivity, NP0 ceramics allow for small size, temperature stable performance over frequency and high reliability in environmentally challenging conditions. This series of bandpass filters was designed to span the popular 2-18 GHz frequency range. The compact size and surface mount attachment allow for low cost of manufacturing without sacrificing performance and repeatability. Designed for use on PCB 8-12 mils thick with a permittivity of 3.0-3.8.

Applications

- C, X and Ku Band
- Satellite communications
- Satellite TV
- Weather and Radar
- Radar and Military communications

Specification

		B028RF2S	B033ND5S	B056RC4S	B096QC2S	B148QF0S
Center Frequency		3 GHz	3.5 GHz	6 GHz	10 GHz	15 GHz
Passband		2 to 4 GHz	3.1 to 3.5 GHz	4 to 8 GHz	8 to 12 GHz	12 to 18 GHz
Insertion Loss (@Fc)	@ 25°C	2.5 dB	2.0 dB	3.0 dB	2.5 dB	3.1 dB
	-40 to +85°C	3.0 dB	3.2 dB	3.5 dB	3.0 dB	3.6 dB
VSWR - 50Ω System		1.63:1 2 to 4 GHz	2.00:1 3.1 to 3.5 GHz	1.5:1 4 to 8 GHz	2.0:1 8 to 12 GHz	1.63:1 12 to 18 GHz
Rejection		dc to 1.25 GHz (40 dB)	dc to 2.6 GHz (30 dB)	dc to 3 GHz (40 dB)	dc to 6 GHz (40 dB)	dc to 7.6 GHz (40 dB)
		4.85 to 6 GHz (40 dB)	4 to 6 GHz (40 dB)	9.5 to 12 GHz (40 dB)	14 to 18 GHz (40 dB)	22.5 to 25 GHz (30 dB)
Usable Temperature Range		-55 to +125°C	-55 to +125°C	-55 to +125°C	-55 to +125°C	-55 to +125°C
Length - Inches (mm)		0.450 (11.43)	0.393 (9.98)	0.450 (11.43)	0.400 (10.86)	0.550 (13.97)
Width - Inches (mm)		0.400 (10.16)	0.353 (8.97)	0.230 (5.84)	0.180 (4.57)	0.150 (3.81)
Height - Inches (mm)		0.113 (2.87)	0.128 (3.25)	0.100 (2.54)	0.100 (2.54)	0.098 (2.49)

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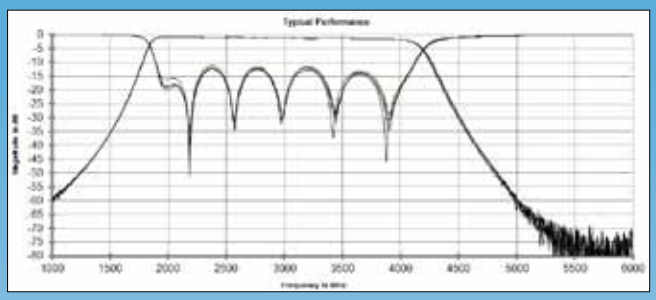
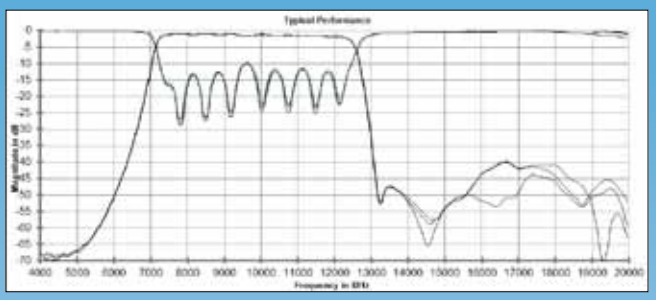
Typical Performance

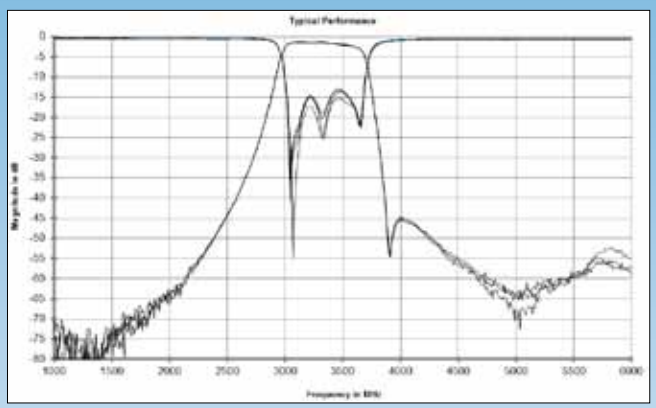
B028RF2S - 2 to 4 GHz



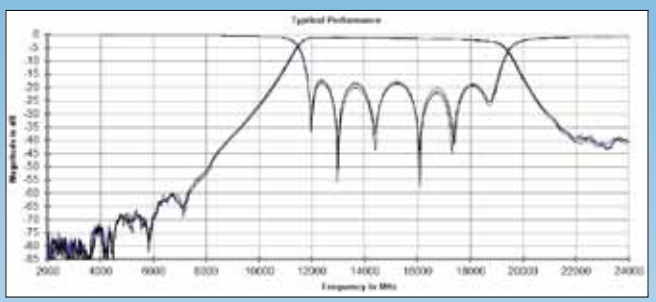
B096QC2S - 8 to 12 GHz



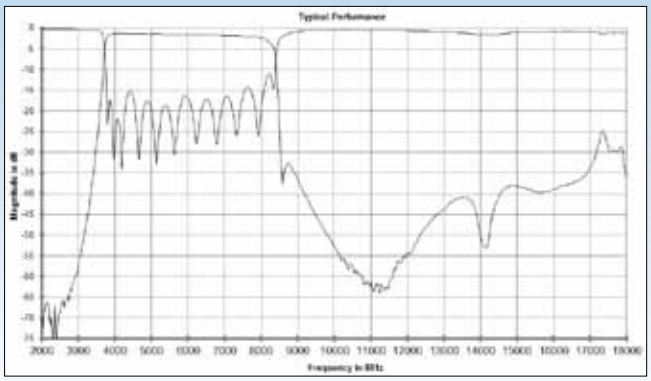
B033ND5S - 3.1 to 3.5 GHz



B148QF0S - 12 to 18 GHz



B056RC4S - 4 to 8 GHz



Mounting Information

PCB ground pattern length and width can be 0.002-0.003 inches larger than filter footprint. Dimensions of filter launch and PCB launch pattern should be closely matched. It is suggested that PCB ground metal be pulled back from RF I/O trace to account for component alignment tolerance. Ground via depth and spacing should be set so as not to create any resonances at the frequency of operation.

Reference SMT Filter Mounting application note for additional mounting information.

Individual footprint diagrams of all Filters are available upon request from the DLI Sales Office.

Qualifications

ISO 9001

AS 9100

RoHS 2011/65/EU Lead Free

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